

NOTES ON THE HEBRIDAE OF THE WESTERN HEMISPHERE WITH
DESCRIPTIONS OF TWO NEW SPECIES
(HETEROPTERA: HEMIPTERA)¹

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Abstract.—*Hebrus longivillus*, n. sp., and *Hebrus spiculus*, n. sp., are described from Arizona and Mesoamerica, respectively. *Hebrus amnicus* Drake and Chapman is established as a new junior synonym of *Hebrus beameri* Porter.

This paper is the fifth of a series intended to revise the Hebridae of the Western Hemisphere. A similar scope was intended by Porter (1950) in his unpublished thesis, but this work is outdated and a complete revision would now be necessary even if it had been published. Porter's work nonetheless has been valuable to us, and his contribution is to be commended.

This paper is based mainly on material in the authors' collections and the Chapman collection at the American Museum of Natural History. Type dispositions are given under each species. Institutional and private collection abbreviations are as follows: American Museum of Natural History, New York, AMNH; National Museum of Natural History, Washington, D.C., USNM; California Academy of Sciences, San Francisco, CAS; J. T. Polhemus Collection, JTP; C. N. McKinnon Collection, CNM. Unless otherwise stated, for all measurements 40 units = 1 mm.

Hebrus beameri Porter

Fig. 1

Hebrus beameri Porter, 1952, J. Kans. Entomol. Soc. 25: 9 (Kansas).

Hebrus amnicus Drake and Chapman, 1953, Great Basin Nat. 13: 10 (Georgia).

NEW SYNONYMY.

The comparison of many specimens of *Hebrus amnicus* with paratypes and topotypes of *H. beameri* leads us to conclude that they are conspecific.

Although the specimens of *H. amnicus* from Georgia have shorter hemelytra than the specimens from Kansas and Indiana (Table 1), we have found that this character varies among different populations as well as within a population. The specimens from Kansas are lighter in coloration and the posterior lobe of the

¹ Contribution from the University of Colorado Museum, Boulder, Colorado 80309 and Martin Marietta Corporation, Denver, Colorado 80201.

Table 1. Variation among three samples of *Hebrus beameri* (all measurements in mm).

Locality	Character	n	\bar{x}	s	Low	High	Sex
Ga.	Length	7	1.87	0.05	1.78	1.92	♂
Ind.	Length	5	1.95	0.08	1.85	2.08	♂
Kans	Length	10	1.82	0.04	1.75	1.89	♂
Ga.	Width	7	0.69	0.03	0.63	0.71	♂
Ind.	Width	5	0.74	0.02	0.72	0.77	♂
Kans.	Width	10	0.71	0.02	0.69	0.75	♂
Ga.	Wing length	7	0.76	0.06	0.63	0.82	♂
Ind.	Wing length	5	0.92	0.07	0.85	1.00	♂
Kans.	Wing length	10	0.98	0.06	0.89	1.05	♂
Ga.	Length	7	2.09	0.10	1.89	2.19	♀
Ind.	Length	3	2.23	0.13	2.08	2.33	♀
Kans.	Length	10	2.05	0.04	1.98	2.14	♀
Ga.	Width	7	0.75	0.03	0.71	0.79	♀
Ind.	Width	3	0.81	0.05	0.76	0.85	♀
Kans.	Width	10	0.78	0.03	0.74	0.82	♀
Ga.	Wing length	7	0.88	0.10	0.76	1.02	♀
Ind.	Wing length	3	1.03	0.16	0.88	1.20	♀
Kans.	Wing length	10	1.05	0.09	0.86	1.18	♀

pronotum is more punctate, but the male genitalia and antennal segments agree well among the three populations.

A redescription and figures of the male genitalia are given below. This should help in separating this species from other brachypterous species.

Brachypterous male.—Moderately long; head fuscous piceous, pronotum and scutellum fuscous; venter black becoming fuscous at connexiva with scattered short pubescence, segment I dull, lacking pubescence; rostral canal ridge with long golden setae. Antennal segments I and II short and moderately incrassate, clothed with short setae; segments III–V slender with scattered long golden setae; measurements—I, 10; II, 7; III, 9; IV, 5; V, 9. Rostrum testaceous, extending beyond posterior coxae; bucculae fuscous, long, extending to prothorax, with locking mechanism; lorum not sutured off from genae, with moderately long setae; genae straight and pronounced. Eyes dark red and coarsely faceted; ocelli small. Head declivent, with 2 anastomosing rows of tiny pits, lacking median sulcus on vertex. Legs moderately long with femora moderately enlarged and clothed with short golden setae. Pronotum twice as wide across humeral angles as median length (27:16); median sulcus as deep as wide, extending well onto posterior lobe, ending anteriorly in a deep pit; pronotal collar encircled with a complete row of tiny pits; anterior and posterior lobes separated by moderate constriction; lobes separated by a transverse line of 6 deep pits; disk of posterior lobe punctate, broadly raised. Scutellum with deeply impressed basal part divided by median carina, edges raised; apex rounded, with small notch, scutellum about twice as wide as median length (13:6). Hemelytra moderately long, not reaching hind margin of connexiva; clavus and corium smoky white; membrane chestnut brown; inner and outer veins fuscous anteriorly becoming piceous posteriorly; inner vein

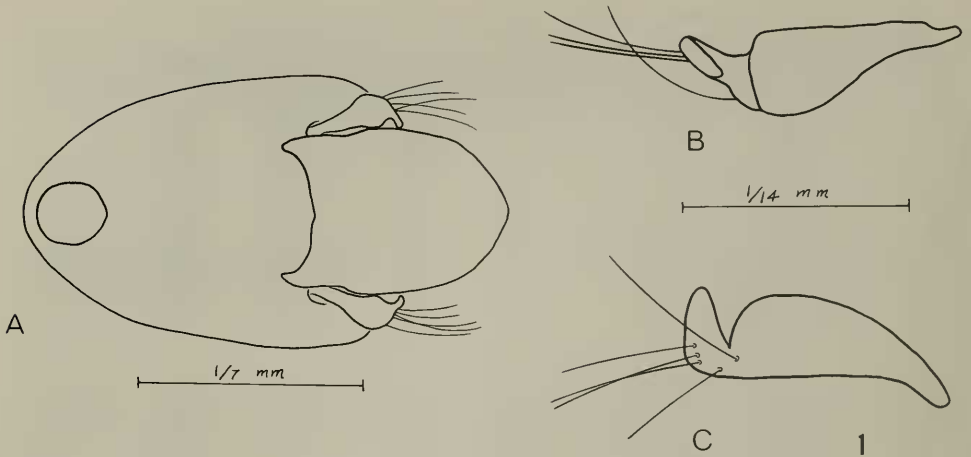


Fig. 1. *Hebrus beameri*, male. A, Genital capsule (short setae not shown). B, C, Right paramere, two views.

produced at distal end; calvus, corium and veins with scattered moderately long setae. Genitalia: Male capsule small, robust, with scattered short setae (Fig. 1A); parameres small, with distal hook (Figs. 1B, C). Length, 1.76 mm; width 0.68 mm across humeri (Kansas).

Female. — Very similar to male, except slightly longer. Length, 2.08 mm; width 0.77 mm across humeri (Kansas).

Macropterous form. — Unknown.

Material. — KANSAS: 7 ♂, 15 ♀, topotypes, Meade Co. St. Pk., IV-28-1979, CL6, C. N. McKinnon (CNM); paratypes of *beameri*, 1 ♂, 2 ♀, Meade Co. St. Pk., VI-7-1950, R. H. Beamer (JTP). INDIANA: 3 ♂, 4 ♀, Monroe Co., II-23-1961, J. C. Schaffner (JTP). GEORGIA: 1 ♂, Calhoun, IV-7-1958, H. C. Chapman; 2 ♂, 2 ♀, Calhoun, VIII-18-1965, H. C. Chapman; 1 ♂, 3 ♀, Calhoun, Sugar Valley, VIII-15-1976, H. C. Chapman (AMNH, JTP). OHIO: 1 ♂, Washington Co., Veto Lk. St. Pk., IX-7-1981, CL51, C. N. McKinnon (CNM).

Comparative notes. — This species is closely allied to *Hebrus obscurus* Polhemus and Chapman and the brachypterous form of *H. consolidus* Uhler. *Hebrus beameri* can be separated from *H. obscurus* by the absence of a deep sulcus on the vertex of the head. The small size and pearly white portion of the clavus of *H. consolidus* separates it from *H. beameri*.

The Kansas specimens were collected from the banks of spring fed streams. Most of the Georgia and Indiana specimens were collected under stones from streams (Drake and Chapman, 1953, 1958; Polhemus and Chapman, 1966). With intensive collecting in similar habitats, this species should be found throughout the eastern states.

Hebrus longivillus Polhemus and McKinnon, NEW SPECIES

Fig. 2

Macropterous male. — Moderately long, head, pronotum and scutellum fuscous piceous; venter black becoming blackish brown on connexiva. Legs and antenna

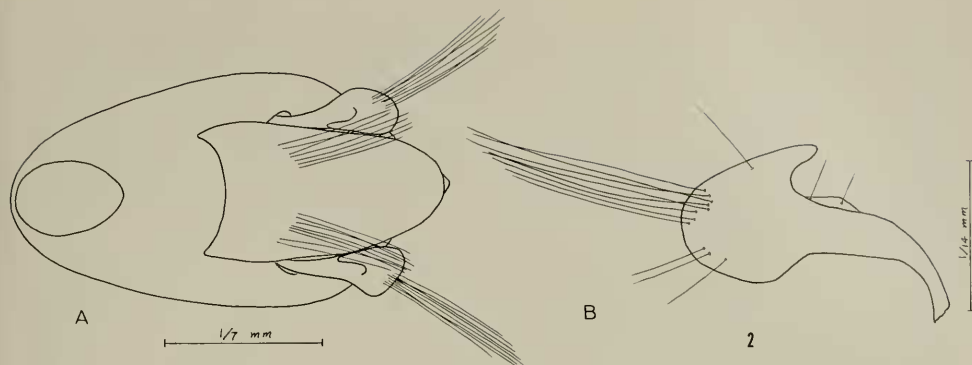


Fig. 2. *Hebrus longivillus*, male. A, Genital capsule (short setae not shown). B, Right paramere.

testaceous. Eye reddish brown, moderately large, coarsely faceted. Antennae moderately long, segments I and II short and moderately incrassate with short setae; III–V, slender and densely clothed with long golden setae; measurements—I, 7; II, 5; III, 7; IV, 5; V, 6. Rostrum testaceous, ending between 2nd and 3rd coxae; bucculae rufous, long with locking mechanism distally; lorum kidney shaped, sutured off from genae; genae straight, not prominent. Legs moderately long, femora moderately enlarged and anteriorly truncate; anterior femur, trochanter clothed with short golden setae, much longer ventrally. Head declivent, with 2 anastomosing rows of pits, lacking a median sulcus on vertex; ocelli small. Pronotum almost twice as wide across humeral angles as median length (30:15); median sulcus depth subequal to width, ending anteriorly in deep pit; row of small pits encircling pronotum just behind collar. Anterior and posterior lobes separated by moderate constriction having 4 moderately deep pits in a transverse line; disk of posterior lobe broadly raised. Scutellum with the deeply impressed basal part divided by median carina, edges raised; apex rounded, with tiny notch. Scutellum width twice median length (17:9). Hemelytra long, reaching hind margin of connexiva; clavus and corium milky white becoming smoky brown posteriorly, membrane smoky brown with numerous small white spots; inner and outer veins light brown anteriorly becoming piceous posteriorly; inner vein not produced distally. Clavus, corium and veins with scattered recumbent golden setae. Venter thickly clothed with short recumbent golden setae, except 1st segment bare; 2 lateral longitudinal patches of long setae (1 + 1), extending across first 3 abdominal sterna. Thoracic pleura each with isolated patch of recumbent golden pubescence. Genital capsule moderately long, with 2 longitudinal rows of long setae extending posteriorly (Fig. 2A); parameres cylindrical and short with point located cephalad of distal end, ending with very long dense tufts of setae (Fig. 2B). Length, 2.26 mm; width 0.93 mm across humeri.

Macropterous female.—Similar to male, but more robust and lacks the 2 long tufts of setae on the first 3 ventral abdominal segments. Length (allotype), 2.23 mm; width 0.93 mm across humeri.

Material.—Holotype, ♂, Arizona, Forestdale, IV-15-65, J. T. Polhemus (JTP). Allotype, ♀, Arizona, Forestdale, VIII-27-80, C. N. McKinnon (CNM). Paratypes as follows, all from Forestdale, Arizona, C. N. McKinnon collector: 3 ♂, 3 ♀, VIII-

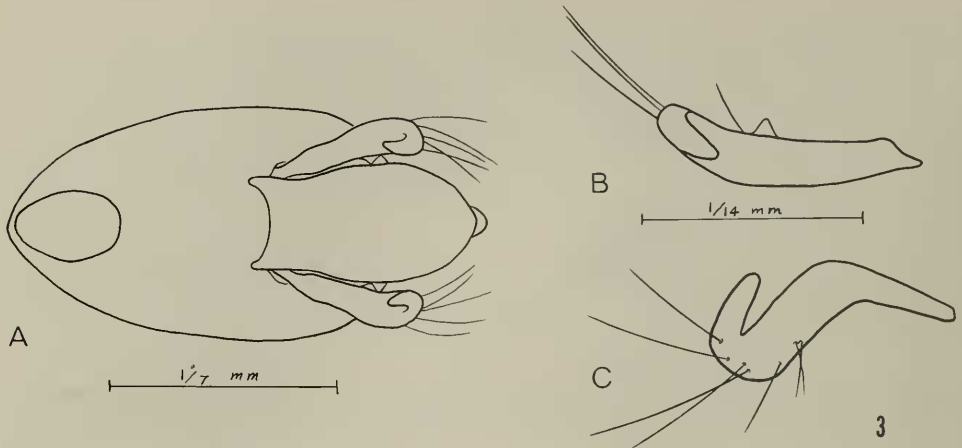


Fig. 3. *Hebrus spiculus*, male. A, Genital capsule (short setae not shown). B, C, Right paramere, two views.

27-80; 1 ♀, Ruin Spring, VII-3-81; 1 ♂, 1 ♀, Spring #1 nr. Trading Post, VII-3-81; 1 ♂, 1 ♀, Spring #2, VII-3-81 (JTP, CNM).

Comparative notes.—This species closely resembles *Hebrus buenoi* Drake and Harris and *H. comatus* Drake and Harris, but can easily be separated by the lack of a median sulcus on the vertex of the head and by the distinctive parameres. In *H. buenoi* the long distal setae on the parameres are shorter proportionally than in *H. longivillus*, and the parameres of the two species differ in shape; the parameres of *H. comatus* are cylindrical distally thus differing greatly in shape from those of either *buenoi* or *longivillus*. The very long setae on the first three ventral abdominal segments is also a good specific character for this species that will separate it from its congeners. These long setae are not present in the other species described here or other *Hebrus* species we have studied except *Hebrus buenoi* Drake and Harris in which they are one-half as long as in *longivillus*.

The Forestdale specimens were collected under rocks and logs along a small spring fed stream in a wooded area. This locality is also the type-locality for *Hebrus obscura* Polhemus and Chapman (1966).

Etymology.—The name *longivillus* (long & villus, Latin, masculine) refers to the long tufts of setae on the parameres and proctiger.

Hebrus spiculus Polhemus and McKinnon, NEW SPECIES

Fig. 3

Macropterous male.—Elongate; head, pronotum and scutellum fusco-rufous with a bluish-green metallic sheen; venter fuscous becoming dark brown on connexiva. Legs, antenna and bucculae testaceous. Eyes reddish brown, moderately large, coarsely faceted. Antenna long, segments I and II slightly incrassate with short pubescence; III–V, slender, clothed with long golden setae, measurements—I, 6; II, 5; III, 7; IV, 4; V, 7. Rostrum testaceous, ending behind posterior coxae; bucculae long with locking mechanism distally; lorum clothed with dense setae; genae straight, not prominent. Legs moderately long with the femora moderately enlarged; clothed with short golden setae; trochanter length twice its median width; head declivent, with 2 anastomosing rows of pits, lacking median sulcus on vertex;

ocelli small. Pronotum twice as wide across humeral angle as median length (24:12). Median sulcus weakly pronounced on posterior lobe, ending anteriorly with a deep pit; complete row of small pits encircling pronotum just behind collar. Anterior and posterior lobes separated by a moderate constriction with 2 deep pits in transverse line, demarcated from anterior pit of median sulcus; disk of posterior lobe broadly raised. Scutellum with deeply impressed basal part divided by median carina, edges raised; apex rounded, bifid, fine recumbent golden setae on tip; apex raised, width $\frac{1}{4}$ greater than the median length (11:7). Hemelytra long, reaching hind margin of connexiva; corium piceous, clavus with a pearly white wedge anteriorly, piceous posteriorly. Membrane brown with a white oval spot next to corium. Corium and clavus with scattered long recumbent golden setae. Venter black, becoming piceous on connexiva, clothed with short recumbent setae. Rostral canal ridges with row of long setae along entire length. Genitalia: Male capsule elongate with scattered short setae (Fig. 3A); parameres with distal hook, inside with a distinct spur (Fig. 3B). Length, 1.63 mm; width 0.65 mm across humeri.

Female.—Similar to male, but slightly longer. Length, 1.78 mm; width 0.73 mm across humeri.

Material.—Holotype, ♂, and allotype, ♀, Costa Rica, San Isidro del General, I-6-1970, CL1302, J. T. Polhemus, in Polhemus Collection. Paratypes as follows, all from COSTA RICA: 1 ♂, 5 ♀, same data as holotype; 2 ♂, 4 ♀, Palmar Norte, I-6-1970, CL1302a, J. T. Polhemus; 2 ♂, 4 ♀, Palmar Norte, XII-28-1969, CL1280, J. T. Polhemus; 1 ♀, Rio de Barranca, I-10-1970, CL1306, J. T. Polhemus; 1 ♂, San Vito de Java, XII-29-1969, CL1285, J. T. Polhemus. PANAMA: 1 ♂, 1 ♀, San Carlos, I-9-1970, CL1300, J. T. Polhemus. COLOMBIA: 1 ♂, Sierra Nevada de Santa Marta, Pueblo Bello (1200m), IV-14&15-1968, Borys Malkin. Paratypes in AMNH, USNM, CAS, and collections of both authors.

Comparative notes.—This species closely resembles *Hebrus consolidus* Uhler, *H. major* Champion, and *H. usingeri* Drake and Harris. *Hebrus spiculus* can easily be separated from these species by the distinct spur on the inner surface of the parameres and by the longitudinal median sulcus of the pronotum. While the paramere of *H. usingeri* has a minute spur on its inner surface, this spur is not prominent as in *spiculus*. *Hebrus major* is much larger and the median sulcus extends onto the pronotal collar, whereas in *H. spiculus* this sulcus ends before the collar. The small size and differently shaped parameres of *H. consolidus* will separate this species from *H. spiculus*.

Etymology.—The name *spiculus* (Latin; masculine) means point which refers to the spur on the inner surface of the paramere.

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